

IN THE CLAIMS: The status of the pending claims follows:

1-56. (Cancelled)

57. (Currently amended): An apparatus comprising:

a platform on which a multiwell protein crystallization plate is positionable, each well of the protein crystallization plate comprising a well for housing mother liquor and a drop region that can be placed in vapor diffusion communication with the well;

a mother liquor drop station capable of removing mother liquor from wells of the multiwell plate and delivering submicroliter volumes of mother liquor to the corresponding drop regions on the multiwell plate within a volume range of less than about 25nL; and

a protein molecule drop station capable of delivering submicroliter volumes of a solution containing a protein to be crystallized to the drop regions within a volume range of less than about 25nL, the delivered mother liquor and the delivered solution containing a protein to be crystallized combining to form a sitting drop protein crystallization experiment having a total volume less than 1μL capable of forming protein crystals suitable of for X-ray diffraction quality.

58. (Currently amended): The apparatus according to claim 57 wherein the mother liquor drop station and the protein molecule drop station are each capable of delivering submicroliter volumes within a volume range of less than about 20nL.

59. (Currently amended): The apparatus according to claim 57 wherein the mother liquor drop station and the protein molecule drop station are each capable of delivering submicroliter volumes within a volume range of less than about 15nL.

60. (Currently amended): The apparatus according to claim 57 wherein the mother liquor drop station and the protein molecule drop station each include a piezoelectric valve or a solenoid valve.

61. (Currently amended): An apparatus comprising:

a platform on which a multiwell protein crystallization plate is positionable, each well of the protein crystallization plate comprising a well for housing mother liquor over which a coverslip comprising a hanging drop may be placed so that the hanging drop and mother liquor in the well are in vapor diffusion with each other;

a cover slip station on which a plurality of coverslips are positionable;

a mother liquor drop station capable of removing mother liquor from wells of the multiwell plate and delivering submicroliter volumes of mother liquor to coverslips within a volume range of less than about 25nL;

a protein molecule drop station capable of delivering submicroliter volumes of a solution containing a protein to be crystallized to the plurality of coverslips within a volume range of less than about 25nL, the delivered mother liquor and the delivered solution containing a protein to be crystallized combining to form a vapor diffusion protein crystallization experiment having a total volume less than 1μL on the coverslip capable of forming protein crystals of suitable for X-ray diffraction quality; and

a mechanism for placing the coverslips over the wells of the multiwell protein crystallization plate.

62. (Currently amended): The apparatus according to claim 61 wherein the mother liquor drop station and the protein molecule drop station are each capable of delivering submicroliter volumes within a volume range of less than about 20nL.

63. (Currently amended): The apparatus according to claim 61 wherein the mother liquor drop station and the protein molecule drop station are each capable of delivering submicroliter volumes within a volume range of less than about 15nL.

64. (Currently amended): The apparatus according to claim 61 wherein the mother liquor drop station and the protein molecule drop station are each capable of delivering submicroliter volumes to at least four coverslips at a time.

65. (Currently amended): The apparatus according to claim 61 wherein the

mother liquor drop station and the protein ~~molecule~~ drop station are each capable of delivering submicroliter volumes to at least eight coverslips at a time.

66-72. (Cancelled)

73-84. (Cancelled)